Cisco MDS 9000 Family Release Notes for Storage Services Interface Image Release 4.2(3m)

Release Date: January 6, 2012

Part Number: OL-20651-13

This document describes the caveats and limitations for the Storage Service Interface (SSI) software for the various Cisco MDS Services Modules (SSM, MSM-18/4, and MDS 9222i module). Use this document in conjunction with the documents listed in the "Related Documentation" section on page 12.

Note Release notes are sometimes updated with new information on restrictions and caveats. Refer to the following website for the most recent version of the *Cisco MDS 9000 Family Release Notes*: http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html

Contents

This document includes the following sections:

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Introduction

The SSI interface provides the following features:

- Network-based volume management (EMC Invista, Incipient iNSP)
- Network-assisted storage applications using SANTap
- Fibre Channel Write Acceleration (FC-WA) and SCSI flow statistics
- Network-Accelerated Serverless Backup (NASB)
- Data Mobility Manager (DMM)
- Secure Data Erase

Note As of NX-OS Release 4.1(1b), SAN-OS has been changed to NX-OS. References to SAN-OS releases before 4.1(1b) still apply.

System Requirements

This section describes the system requirements for Cisco MDS NX-OS Release 4.2(3m) and includes the following topics:

Components Supported

Table 1 lists the software and hardware components supported by the Cisco MDS 9000 Family.

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components

Component	Part Number	Description	Applicable Product
Software	M95S2K9-4.2.3a	MDS 9500 Supervisor/Fabric-2, NX-OS software.	MDS 9500 Series only
	M92S2K9-4.2.3a	MDS 9222 Supervisor/Fabric-2, NX-OS software.	MDS 9200 Series only
	M92S1K9-4.2.3a	MDS 9216 Supervisor/Fabric-I, NX-OS software.	MDS 9216i only
	M91S2K9-4.2.3a	MDS 9100 Supervisor/Fabric-2, NX-OS software.	MDS 9100 Series only

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
SSI Interface	SSI-M9K9-423m	Storage Services Interface for NX-OS Release 4.2(3m)	MDS 9000 Family
Licenses	M9500SSE184K9	Storage Services Enabler License for one MSM-18/4 module	MDS 9500 Series only
	M9222ISSE1K9	Storage Services Enabler License	MDS 9222i Switch only
	M9200SSE184K9	Storage Services Enabler License for one MSM-18/4 module	MDS 9200 Series only
	M95DMM184K9	Data Mobility Manager License for one MSM-18/4 module	MDS 9500 Series only
	M9222IDMMK9	Data Mobility Manager License for Cisco MDS 9222i	MDS 9222i Switch
Licenses (continued)	M92DMM184K9	Data Mobility Manager License for one MSM-18/4 module	MDS 9200 Series only
	M95DMM184TSK9	Data Mobility Manager for one MSM-18/4 module — Time limited to 180 days only	MDS 9500 Series only
	M9222IDMMTSK9	Data Mobility Manager — Time limited to 180 days only	MDS 9222i Switch only
	M92DMM184TSK9	Data Mobility Manager for one MSM-18/4 module — Time limited to 180 days only	MDS 9200 Series only
Chassis	DS-C9513	Cisco MDS 9513 Multilayer Director (13-slot multilayer director with 2 slots for Supervisor-2 modules, with 11 slots available for switching modules — SFPs sold separately)	MDS 9513 Switch
	DS-C9509	Cisco MDS 9509 Multilayer Director (9-slot multilayer director with 2 slots for Supervisor modules, with 7 slots available for switching modules — SFPs sold separately)	MDS 9509 Switch
	DS-C9506	Cisco MDS 9506 Multilayer Director (6-slot multilayer director with 2 slots for Supervisor modules, with 4 slots available for switching modules — SFPs sold separately)	MDS 9506 Switch
	DS-C9222i-K9	Cisco MDS 9222i Multilayer Fabric Switch (3-rack-unit (3RU) semimodular multilayer fabric switch with 18 4-Gbps Fibre Channel ports, 4 Gigabit Ethernet ports, and a modular expansion slot for Cisco MDS 9000 Family Switching and Services modules)	MDS 9222i Switch
	DS-C9216i-K9	Cisco MDS 9216i Multilayer Fabric Switch(3RU semi-modular multilayer fabric switch with 14 2-Gbps Fibre Channel ports, 2 Gigabit Ethernet ports, and a modular expansion slot for Cisco MDS 9000 Family Switching and Services modules)	MDS 9216i Switch
	DS-C9134-K9	Cisco MDS 9134 34-Port Multilayer Fabric Switch (1RU fixed-configuration multilayer fabric switch with 32 4-Gbps and 2 10-Gbps Fibre Channel ports)	MDS 9134 Switch
	DS-C9124-K9	Cisco MDS 9124 24-Port Multilayer Fabric Switch (1RU fixed-configuration multilayer fabric switch with 24 4-Gbps Fibre Channel ports)	MDS 9124 Switch

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Supervisor Modules	DS-X9530-SF2-K9	Cisco MDS 9500 Series Supervisor-2 Module	MDS 9500 Series
	DS-X9530-SF2A-K9	Cisco MDS 9500 Series Supervisor-2A Module	MDS 9500 Series
Switching Modules	DS-X9016	Cisco MDS 9000 16-Port Fibre Channel Switching Module with Small Form-Factor Pluggable (SFP) LC (16-port, 2-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9216i and Cisco MDS 9500 Series)	MDS 9500 Series MDS 9216i Switch
	DS-X9032	Cisco MDS 9000 32-Port 2-Gbps Fibre Channel Switching Module with SFP LC connectors	MDS 9500 Series MDS 9216i Switch
	DS-X9112	Cisco MDS 9000 12-port 4-Gbps Fibre Channel Switching Module with SFP LC connectors	MDS 9500 Series MDS 9200 Series
	DS-X9124	Cisco 24-port 4-Gbps Fibre Channel Switching Module with SFP LC connectors	MDS 9500 Series MDS 9200 Series
	DS-X9148	Cisco MDS 9000 48-port 4-Gbps Fibre Channel Switching Module with SFP LC	MDS 9500 Series MdS 9200 Series
	DS-X9704	Cisco MDS 9000 Family 4-Port 10-Gbps Fibre Channel Switching Module with SFP LC	MDS 9500 Series MdS 9200 Series
	DS-X9224-96K9	Cisco MDS 9000 24-Port 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC connectors	MDS 9500 Series
	DS-X9248-96K9	Cisco MDS 9000 48-Port 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC connectors	MDS 9500 Series
	DS-X9248-48K9	Cisco MDS 9000 4/44-Port Host-Optimized 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC connectors	MDS 9500 Series MDS 9222i Switch
Services Modules	DS-X9304-18K9	Cisco MDS 9000 18/4-Port Multiprotocol Services Module (MSM-18/4) — 18-port, 4-Gbps Fibre Channel plus 4-port Gigabit Ethernet IP services and switching module with SFP LC connectors	MDS 9500 Series MDS 9200 Series
	DS-X9302-14K9	Cisco MDS 9000 14/2-Port Multiprotocol Services Module — 14-port, 2-Gbps Fibre Channel plus 2-port Gigabit Ethernet IP services and switching module with SFP LC connectors	MDS 9500 Series MDs 9216i Switch
	DS-X9032-SSM	Cisco MDS 9000 32-Port Storage Services Module — 32-port, 2-Gbps storage services module with SFP LC connectors	MDS 9500 Series MDs 9200 Series
External crossbar module	DS-13SLT-FAB1	Cisco MDS 9513 Switching Fabric1 Module	MDS 9513 Switch
	DS-13SLT-FAB2	Cisco MDS 9513 Switching Fabric2 Module	MDS 9513 Switch

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Optics	DS-X2-FC10G-SR	X2 SC optics, 10-Gbps Fibre Channel for short reach	MDS 9500 Series MDS 9200 Series
	DS-X2-FC10G-LR	X2 SC optics, 10-Gbps Fibre Channel for long reach (10 km)	MDS 9500 Series MDS 9200 Series
	DS-X2-FC10G-ER	X2 SC optics, 10-Gbps Fibre Channel for extended reach (40 km)	MDS 9500 Series MDS 9200 Series
	DS-X2-FC10G-CX4	X2 SC optics, 10-Gbps Fibre Channel over copper	MDS 9500 Series MDS 9200 Series
	DS-X2-E10G-SR	X2 SC optics, 10-Gbps Ethernet for short reach	MDS 9500 Series MDS 9200 Series
LC-type fiber-optic SFP	DS-SFP-FC8G-SW	SFP+ optics (LC type) for 2-, 4-, or 8-Gbps Fibre Channel for shortwave mode	MDS DS-X9200 Series switching modules
	DS-SFP-FC8G-LW	SFP+ optics (LC type) for 2-, 4-, or 8-Gbps Fibre Channel for longwave mode; supports distances up to 10 km	MDS DS-X9200 Series switching modules
	DS-SFP-FC4G-SW	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for shortwave mode	MDS 9124 and DS-X9100 Series switching modules
	DS-SFP-FC4G-MR	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for longwave mode; supports distances up to 4 km	MDS 9124 and DS-X9100 Series switching modules
	DS-SFP-FC4G-LW	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for longwave mode; supports distances up to 10 km	MDS 9124 and DS-X9100 Series switching modules
	DS-SFP-FC-2G-SW	SFP optics (LC type) for 1- or 2-Gbps Fibre Channel for shortwave mode; not supported for use in 4-Gbps-capable ports	MDS 9000 Series
	DS-SFP-FC-2G-LW	SFP optics (LC type) for 1- or 2-Gbps Fibre Channel for longwave mode for Cisco MDS 9500, MDS 9200, and MDS 9100 Series; not supported for use in 4-Gbps-capable ports	MDS 9000 Series
	DS-SFP-FCGE-SW	SFP optics (LC type) for 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel for shortwave mode; not supported for use in 4-Gbps-capable ports	MDS 9000 Series
	DS-SFP-FCGE-LW	SFP optics (LC type) for 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel for longwave mode; not supported for use in 4-Gbps-capable ports	MDS 9000 Series
	DS-SFP-GE-T	SFP (RJ-45 connector) for Gigabit Ethernet over copper	MDS 9000 Series

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Cisco Coarse Wavelength-Division Multiplexing (CWDM)	DS-CWDM-xxxx	CWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC type, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm	MDS 9000 Family
	DS-CWDM4Gxxxx	CWDM 4-Gbps Fibre Channel SFP LC type, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm	MDS 9000 Family
Dense Wavelength-Division Multiplexing (DWDM)	DWDM-X2-xx.xx	DWDM X2 SC optics for 10-Gbps Fibre Channel connectivity to an existing Ethernet DWDM infrastructure, with 15xx.xx nm wavelength, where xx.xx = 60.61, 59.79, 58.98, 58.17, 56.55, 55.75, 54.94, 54.13, 52.52, 51.72, 50.92, 50.12, 48.51, 47.72, 46.92, 46.12, 44.53, 43.73, 42.94, 42.14, 40.56, 39.77, 38.98, 38.19, 36.61, 35.82, 35.04, 34.25, 32.68, 31.90, 31.12, or 30.33	MDS 9500 Series MDS 9200 Series
	DWDM-SFP-xxxx	DWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC type, where product number xxxx = 3033, 3112, 3190, 3268, 3425, 3504, 3582, 3661, 3819, 3898, 3977, 4056, 4214, 4294, 4373, 4453, 4612, 4692, 4772, 4851, 5012, 5092, 5172, 5252, 5413, 5494, 5575, 5655, 5817, 5898, 5979, or 6061nm	MDS 9000 Family
Add/Drop Multiplexer (ADM)	DS-CWDMOADM4A	4-channel CWDM optical ADM (OADM) module (Cisco CWDM 1470, 1490, 1510, or 1530 NM Add/Drop Module)	MDS 9000 Family
	DS-CWDMOADM4B	4-channel CWDM OADM module (Cisco CWDM 1550, 1570, 1590, or 1610 NM Add/Drop Module)	MDS 9000 Family
	DS-CWDM-MUX8A	ADM for 8 CWDM wavelengths	MDS 9000 Family
CWDM Multiplexer Chassis	DS-CWDMCHASSIS	2-slot chassis for CWDM ADMs	MDS 9000 Family
Power Supplies	DS-CAC-300W	300W AC power supply	MDS 9100 Series
	DS-C24-300AC	300W AC power supply	MDS 9124 Switch
	DS-CAC-845W	845W AC power supply for Cisco MDS 9200 Series	MDS9200 Series
	DS-CAC-3000W	3000W AC power supply for Cisco MDS 9509	MDS 9509 Switch
	DS-CAC-6000W	6000W AC power supply for Cisco MDS 9513	MDS 9513 Switch
	DS-CAC-1900W	1900W AC power supply for Cisco MDS 9506	MDS 9506 Switch
CompactFlash	MEM-MDS-FLD512M	External 512-MB CompactFlash memory for supervisor module	MDS 9500 Series
Port Analyzer Adapter	DS-PAA-2, DS-PAA	A standalone Fibre Channel-to-Ethernet adapter that allows for simple, transparent analysis of Fibre Channel traffic in a switched fabric	MDS 9000 Family
Smart Card Reader	DS-SCR-K9	Storage Media Encryption (SME) Smart Card Reader	MDS 9000 Family

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Smart Card	DS-SC-K9	SME Smart Card	MDS 9000 Family
CD-ROM	M90FM-CD-441	Cisco MDS 9000 Management Software and Documentation CD-ROM for Cisco MDS 9000 NX-OS Software Release 4.2(3)	MDS 9000 Family

Determining the Software Version

Note Use the latest available software release supported by your vendor for all Cisco MDS 9000 Family products.

To determine the version of the Cisco NX-OS software currently running on a Cisco MDS 9000 Family switch using the CLI, log into the switch and enter the **show version** command.

To determine the version of the Cisco NX-OS software currently running on a Cisco MDS 9000 Family switch using the Fabric Manager, from the Switches tab in the information pane, locate the switch using the IP address, logical name, or WWN, and then check its version in the Release column.

Downloading Software

To download the latest Cisco software, access the Software Center at this URL:

http://www.cisco.com/public/sw-center

Note If you would like to request code to be provided under the terms of either GNU General Public License (GPL) or the GNU Lesser General Public License (LGPL), contact mds-software-disclosure@cisco.com.

If SSMs are present in a Cisco MDS 9000 Family switch, these upgrades may be performed as required:

- Upgrading a previously provided package
- Upgrading the SAN-OS image
- Reformatting the SSM add-on image

If you need additional information about installing or upgrading the SSM, refer to the *Cisco MDS 9000 Family Storage Services Module Software Installation and Upgrade Guide*.

New Features

This section describes the new features introduced in this release. For more information about the features listed, see the documentation set listed in the"Obtaining Documentation and Submitting a Service Request" section on page 14.

The SSI Release 4.2(3m) image is compatible with the following Cisco MDS NX-OS Releases: 4.2(3), 4.2(3a), 4.2(7a), 4.2(7b), 4.2(7d), and 4.2(7e).

There are no new features in this release.

Limitations

This sections lists limitations or restrictions associated with this release.

Length of SANTap Commands

If you execute a SANTap command that is equal to or greater than 18 characters, the command fails and displays an error message like the following:

```
switch# sh santap module 8 dvt
remuser too long
```

Commands that have fewer characters, such as the **sh ivr** command or the **sh zoneset act** command, execute correctly.

You might see this issue if you are collecting information from the supervisor module and you attempt to execute SANTap commands that are 18 characters in length or more.

There are two ways to work around this issue:

- Attach to the module and collect the information on the module itself.
- Enter a command with less than 18 characters.

SANTap Does Not Support VMware vStorage APIs for Array Integration

The Cisco MDS SSI Release 4.2(3m) image for SANTap is not compatible with the Hardware Acceleration vStorage APIs for Array Integration (VAAI) feature of vSphere 4.1.

Table 2 lists the SCSI commands that are issued as part of vSphere 4.1 Hardware Acceleration.

Table 2 SCSI Commands That are Issued in vSphere 4.1 Hardware Acceleration

Command	Opcode
Write same (16)	0x93
UNMAP	0x42
Extended copy	0x83
Compare and Write	0x89
Compare and Swap	0xf1

For more information about the vSphere 4.1 Hardware Acceleration feature, go to this URL:

http://www.vmware.com/support/vsphere4/doc/vsp_41_new_feat.html#storage

Configuring SSM Ports in Auto Mode

Starting with Cisco MDS SAN-OS Release 3.0(1), the SSM front panel ports can no longer be configured in auto mode. Because auto mode is the default for releases prior to Release 3.0(1), you should modify the configuration of the ports before upgrading the SAN-OS software image to NX-OS Release 4.2(3a) to avoid any traffic disruption.

For information on how to reconfigure the SSM ports, refer to the “Reconfiguring SSM Ports Before Upgrading to NX-OS Release 4.2(3a)” section of the *Cisco MDS 9000 Family Release Notes for Cisco MDS NX-OS Release 4.2(3a).*

Compatibility Matrix

Before upgrading your SSI image, refer to the *Cisco MDS NX-OS Release Compatibility Matrix for Storage Service Interface Images,* and to Table 11 in the *MDS 9000 Family Release Notes for NX-OS Release 4.2(3a)*. Use Table 11 to determine your nondisruptive upgrade path to Cisco MDS NX-OS Release 4.2(3m).

Note If you are using SANTap in your environment, you cannot upgrade directly from SAN-OS Release 3.3.x to NX-OS Release 4.2. The only supported upgrade path for SANTap environments is from SAN-OS Release 3.3.x to NX-OS Release 4.1.x to NX-OS Release 4.2.

Caveats

This section lists the open and resolved caveats for Cisco MDS SSI Release 4.2(3m). Use Table 2 to determine the status of a particular caveat. In the table, "O" indicates an open caveat and "R" indicates a resolved caveat.

Table 3 Open and Resolved Caveats for Cisco MDS 9000 SSI Release 4.2(3m)

DDTS	Status
CSCtg23573	O
CSCti56186	O
CSCtk60509	R
CSCtl47271	R
CSCtn29297	R
CSCtn99836	R
CSCto09131	R
CSCts31851	R
CSCtt12074	R

Resolved Caveats

- CSCtk60509

  Symptom: The SANTap DPP may cause CRC errors in a multiple a FE/BE VSAN setup with a heavy I/O load.

  Conditions: This symptom might be seen when SANTap is running on a Cisco MDS MSM-18/4 modulue or Cisco MDS 9222i module with a multiple FE/BE VSAN configuration, and there is a heavy I/O load on both VSANs.

  Workaround: This issue is resolved.

- CSCtl47271

  Symptom: The SANTap module failed with the following errors and produced a partial core dump:

  ```
  %MODULE-2-MOD_DIAG_FAIL: Module<n> (serial: nnnnnnnnnnn) reported failure on ports
  x/x-x/xx (0x0) due to ISAPI experienced an error in device 41 (device error 0x0)
  An exception error is also seen, Fatal Error,
  System Errorcode  : 0x40420027 ISAPI experienced an error
  Port(s) Affected  : 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22
  Error Description : reset ILC after RMGR notification reply timeout
  ```

  Conditions: This might be seen in Cisco NX-OS Release 4.2(3) with SSI Release 4.2(3j).

  Workaround: This issue is resolved.

- CSCtn29297

  Sympton: The Device Discovery Library does not correctly handle the ISAPI_STATUS_BUSY message which causes a recursive loop where the library continuously retries and results in buffer starvation at scsi-klm and an eventual system failure.

  Workaround: This issue has been fixed.

- CSCtn99836

  Symptom: Rarely, following an upgrade of a Cisco MDS NX-OS image and a Cisco MDS SSI image, SANTap objects might not be created because of a mismatched vt_id field. As a result, SANTap does not come up.

  Workaround: The issue is resolved

- CSCto09131

  Symptom: A DPP failure causse the MSM-18/4 moudle to reload. The show cores command displays the following ouput:

  ```
  switch# show cores
  Module-num       Instance-num      Process-name     PID      Core-create-time
  ----------       ------------      ------------     ---      ----------------
  4                1                 sb_part.0.0.0    12350000 Jul 11 14:45
  4                1                 ps_stap          1458     Jul 11 14:46
  4                1                 sb_part.0.0.1    12350100 Jul 11 14:46
  4                1                 sb_part.0.0.2    12350200 Jul 11 14:46

  Signatures in the bt
  #1  0x103a2360 in ssram_malloc () at
  ../platform/storage/las/linecard/dpp/isapi/octeon/sys/mem_xse.c:47
  ```

Conditions: This symptom might be seen when the RPA (ADT) flaps

Workaround: This issue is resolved.

- CSCts31851

  Symptom: The Cisco MDS 9000 18/4-Port Multiprotocol Services Module (MSM-18/4 module, DS-X9304-18K9) where SANTap is deployed fails with a core ps_stap. The exception logs have the following messages:

  ```
  System Errorcode  : 0x40420027 ISAPI experienced an error
  Error Description : reset ILC after RMGR notification reply timeout
  ```

  This issue might be seen in Cisco MDS SSI Release 5.0(4j) when processing ABTS to an AVT.

  Workaround: This issue is resolved.

- CSCtt12074

  Symptom: RPAs receive the RESP_BUSY message from the switch:

  ```
  "ST_QUIESCE_RESP (status=ST_RESP_BUSY)"
  ...
  SCP: (Pacing Enabled: TRUE(1)) #Reset 1
  Max: 2048, Outstanding: 2048, Num Busys Sent 822090
  ...
  DVT:
  commands received: 1720566613, aborted: 8, dropped: 50
  responses sent: 1720566557, good: 1720350657, CC: 6059, busy: 61, resv conflict: 209830, other: 0
  ```

  This symptom might be seen in Cisco MDS SSI Release 5.0(4k) on either the SSM module or the MSM-18/4 module.

  Workaround: This issue is resolved.

Open Caveats

- CSCtg23573

  Symptom: A critical error such as a DPP failure on a service module running SANTap may result in a module or switch reload. The reload may take an extra 10 minutes on a Cisco MDS MSM-18/4 module or a MDS 9222i supervisor module that is running SANTap.

  Conditions: This symptom may be seen only when SANTap is running on the Cisco MDS MSM-18/4 module or on a Cisco MDS 9222i supervisor module.

  Workaround: None. The delay in the module or switch reload does not have any side effects.

- CSCti56186

  Symptom: Following a successful upgrade of the SSI image on a Cisco MDS MSM-18/4 module where SANTap is enabled, SANTap may go into an unknown state.

  Workaround: After the upgrade is completely finished, manually reload the Cisco MDS MSM-18/4 module to recover from the unknown state.

Related Documentation

The documentation set for NX-OS for the Cisco MDS 9000 Family includes the following documents. To find a document online, access the following web site:

http://www.cisco.com/en/US/products/ps5989/tsd_products_support_series_home.html

The documentation set for Cisco Fabric Manager appears in the Cisco Fabric Manager Release Notes available from the following website:

http://www.cisco.com/en/US/products/ps10495/prod_release_notes_list.html

Release Notes

- *Cisco MDS 9000 Family Release Notes for Cisco MDS NX-OS Releases*
- *Cisco MDS 9000 Family Release Notes for MDS SAN-OS Releases*
- *Cisco MDS 9000 Family Release Notes for Storage Services Interface Images*
- *Cisco MDS 9000 Family Release Notes for Cisco MDS 9000 EPLD Images*

Regulatory Compliance and Safety Information

- *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family*

Compatibility Information

- *Cisco Data Center Interoperability Support Matrix*
- *Cisco MDS 9000 NX-OS Hardware and Software Compatibility Information and Feature Lists*
- *Cisco MDS NX-OS Release Compatibility Matrix for Storage Service Interface Images*
- *Cisco MDS 9000 Family Switch-to-Switch Interoperability Configuration Guide*
- *Cisco MDS NX-OS Release Compatibility Matrix for IBM SAN Volume Controller Software for Cisco MDS 9000*
- *Cisco MDS SAN-OS Release Compatibility Matrix for VERITAS Storage Foundation for Networks Software*

Hardware Installation

- *Cisco MDS 9500 Series Hardware Installation Guide*
- *Cisco MDS 9500 Series Supervisor-2A Module Tech Note*
- *Cisco MDS 9200 Series Hardware Installation Guide*
- *Cisco MDS 9100 Series Hardware Installation Guide*
- *Cisco MDS 9124 and Cisco MDS 9134 Multilayer Fabric Switch Quick Start Guide*

Software Installation and Upgrade

- *Cisco MDS 9000 NX-OS Release 4.1(x) and SAN-OS 3(x) Software Upgrade and Downgrade Guide*
- *Cisco MDS 9000 Family Storage Services Interface Image Install and Upgrade Guide*
- *Cisco MDS 9000 Family Storage Services Module Software Installation and Upgrade Guide*

Cisco NX-OS

- *Cisco MDS 9000 Family NX-OS Licensing Guide*
- *Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide*
- *Cisco MDS 9000 Family NX-OS System Management Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Fabric Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Quality of Service Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Security Configuration Guide*
- *Cisco MDS 9000 Family NX-OS IP Services Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Intelligent Storage Services Configuration Guide*
- *Cisco MDS 9000 Family NX-OS High Availability and Redundancy Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide*

Command-Line Interface

- *Cisco MDS 9000 Family Command Reference*

Intelligent Storage Networking Services Configuration Guides

- *Cisco MDS 9000 I/O Acceleration Configuration Guide*
- *Cisco MDS 9000 Family SANTap Deployment Guide*
- *Cisco MDS 9000 Family Data Mobility Manager Configuration Guide*
- *Cisco MDS 9000 Family Storage Media Encryption Configuration Guide*
- *Cisco MDS 9000 Family Secure Erase Configuration Guide*
- *Cisco MDS 9000 Family Cookbook for Cisco MDS SAN-OS*

Troubleshooting and Reference

- *Cisco NX-OS System Messages Reference*
- *Cisco MDS 9000 Family NX-OS Troubleshooting Guide*
- *Cisco MDS 9000 Family NX-OS MIB Quick Reference*
- *Cisco MDS 9000 Family NX-OS SMI-S Programming Reference*

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.

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